

Sample Lab Report

August 28, 2014

Name: Fred Flintstone, Barney Rubble and Dino

Lab Number: 1-1

What Were the Objectives of this Lab?

To give us experience with

- Gathering data
- Analyzing data
- Identifying sources of variation
- Writing a lab report

Explain Briefly the Experimental Procedure You Used in this Lab.

We set the angles γ and α both to 45 degrees. Each pair of us took turns being the releaser and timer. For each run the releaser released the ball and the timer timed the ball's stay in the funnel. Each pair did three runs, giving a total of 18 observations.

Times were plotted versus order of the run (Figure 1). There did not seem to be evidence of instability.

Times were also plotted versus group (Figure 2). Both groups db (Dino as releaser and Barney as timer) and df showed high variation in having two very high times and one very low time. Fred and Barney reported that Dino's attention span was not all that it should have been, and that the very short times were the result. The other main source of variation in the times were the consistently low times from group fb. It turned out that Fred and Barney had told Wilma and Betty (their wives) that they would be home early. These runs were done late, and were rushed in the process.

Later, the three of us sat down and, using our experience with the lab, summarized the sources of variability in the process. For example, some sources of variability are in (a) the methods, in holding the tube and measuring the angles, (b) human, releaser-timer reaction, (c) the machine, insufficiently steady and faulty equipment (d) the measurements, releaser and timer coordination, and (e) the environment, too noisy and lack of space.

Summarize what You Learned from this Lab.

We learned how to use the funnel apparatus to gather data, how to analyze that data and identify sources of variation in it, and how to write a lab report.

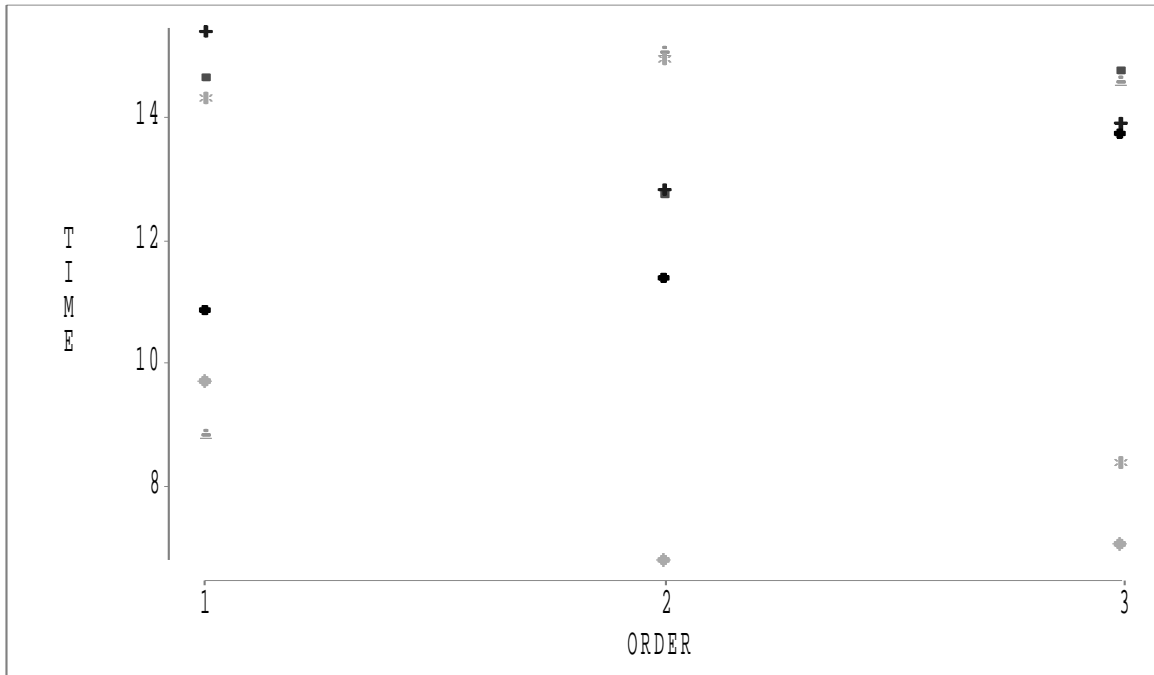


Figure 1: Funnel Data: Scatterplot of Time versus Order

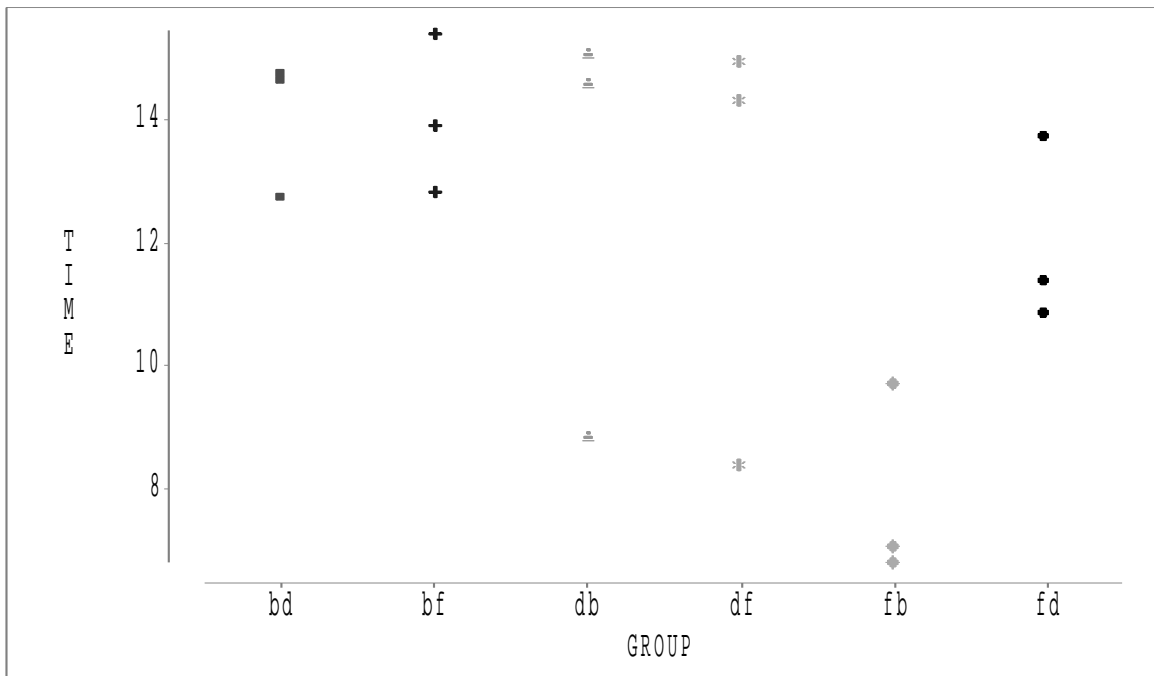


Figure 2: Funnel Data: Scatterplot of Time versus Group